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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/815,257	03/31/2004	Jennifer Dean	139361-2	7461
23413	7590	12/08/2004		
CANTOR COLBURN, LLP 55 GRIFFIN ROAD SOUTH BLOOMFIELD, CT 06002			EXAMINER BOYKIN, TERRESSA M	
			ART UNIT 1711	PAPER NUMBER

DATE MAILED: 12/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/815,257	DEAN ET AL.
	Examiner	Art Unit
	Terressa M. Boykin	1711

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 25 June 2004.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-21 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    - a) All    b) Some \* c) None of:
      1. Certified copies of the priority documents have been received.
      2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
      3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 6-25-04.
- 4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: \_\_\_\_\_.

**Claim Rejections - 35 USC § 102**

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

**Claims 1-22 are rejected under 35 U.S.C. 102(e) as being anticipated by USP 6740413 see abstract, cols. 1-4, claims 14-16.**

USP 6740413 is directed to antistatic compositions comprising antistatic agents that contain polyoxyalkylene-substituted quaternary ammonium cations having a single ammonium center and at least one fluorinated anion. Particularly, the antistatic composition comprises (a) at least one polymeric salt consisting of (i) at least one polyoxyalkylene ammonium cation, and (ii) a fluorinated anion. Note that claims 14, 15 and 16 of the reference that the antistatic composition comprises an insulating material which is a thermoplastic polymer.

The reference discloses that the composition of the invention can be prepared by (a) combining at least one antistatic and at least one thermoplastic polymer (optionally, along with other additives) and then melt processing the resulting combination; or (b)

combining at least one antistatic and at least one thermosetting polymer or the reactive precursors thereof (optionally, along with other additives) and then allowing the resulting combination to cure, optionally with the application of heat or actinic radiation.

Alternative processes for preparing the composition include, for example, (c) applying a treatment composition comprising at least one antistatic to at least a portion of at least one surface of at least one insulating material; (d) dissolving at least one antistatic and at least one insulating material in at least one solvent and then casting or coating the resulting solution and allowing evaporation of the solvent, optionally with the application of heat; and (e) combining at least one antistatic and at least one monomer (optionally, along with other additives including solvent) and then allowing polymerization of the monomer to occur, optionally with the application of heat or actinic radiation.

With regard to applicants' claim 2 note that the reference discloses in claims 16 that the thermoplastic polymer is selected from the group consisting of polyethylene, polypropylene, polybutylene, poly(ethylene-octene), poly(ethylene-butene), polyurethane, and mixtures thereof.

With regard to applicants' claim 3 note that the reference disclose an antistatic composition comprising (a) at least one polymeric salt consisting of (i) at least one polyoxyalkylene ammonium cation, and (ii) a fluorinated anion. The composition exhibits good antistatic characteristics.

With regard to applicants' claim 4 note that the reference disclose in col. 5 lines 44-55, the fluorinated anions of the present invention are either fully fluorinated, that is perfluorinated, or partially fluorinated alkyl or aryl sulfonates (within the organic

portion). Preferred fluorinated anions include those that comprise a highly fluorinated alkanesulfonate group, that is, a perfluoroalkanesulfonate group or a partially fluorinated alkanesulfonate group wherein all non-fluorine carbon-bonded substituents are bonded to carbon atoms other than the carbon atom that is directly bonded to the sulfonate group (preferably, all non-fluorine carbon-bonded substituents are bonded to carbon atoms that are more than two carbon atoms away from the sulfonate group).

With regard to applicants' claim 5 note that the polyoxylakylene is in fact a backbone comprising a linear branched or cyclic alkyl group etc.

With regard to applicants' claims 6 and 8 the reference discloses in col. 8 lines 36 through 63 that suitable synthetic polymers (which can be either thermoplastic or thermoset) include commodity plastics such as, for example, poly(vinyl chloride), polyethylenes (high density, low density, very low density), polypropylene, polybutylene, and polystyrene; engineering plastics such as, for example, polyesters (including, for example, poly(ethylene terephthalate) and poly(butylene terephthalate), polyamides (aliphatic, amorphous, aromatic), polycarbonates (for example, aromatic polycarbonates such as those derived from bisphenol A), polyoxymethylenes, polyacrylates and polymethacrylates (for example, poly(methyl methacrylate)), some modified polystyrenes (for example, styrene-acrylonitrile (SAN) and acrylonitrile-butadiene-styrene (ABS) copolymers), high-impact polystyrenes (SB), fluoroplastics, and blends such as poly(phenylene oxide)-polystyrene and polycarbonate-ABS; high-performance plastics such as, for example, liquid crystalline polymers (LCPs), polyetherketone (PEK), polysulfones, polyimides, and polyetherimides; thermosets such as, for example, alkyd resins, phenolic resins, amino

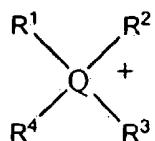
resins (for example, melamine and urea resins), epoxy resins, unsaturated polyesters (including so-called vinyl esters), polyurethanes, allylics (for example, polymers derived from allyldiglycolcarbonate), fluoroelastomers, and polyacrylates; and the like and blends thereof. Suitable naturally occurring polymers include proteinaceous materials such as silk, wool, and leather; and cellulosic materials.

With regard to applicants' claim 7, as noted above in the preparation, step(e) discloses combining at least one antistatic and at least one monomer (optionally, along with other additives including solvent) and then allowing polymerization of the monomer to occur, optionally with the application of heat or actinic radiation.

The reference discloses that insulating materials that are suitable for topical treatment include materials that have relatively low surface and bulk conductivity and that are prone to static charge build-up. These materials include both synthetic and naturally-occurring polymers (or the reactive precursors thereof, for example, mono- or multifunctional monomers or oligomers) that can be either organic or inorganic in nature, as well as ceramics, glasses, and ceramic/polymer composites, ceramers, or the reactive precursors thereof.

The reference discloses that antistatic agents can also be blended with monomers, curable oligomers, or curable polymers followed by polymerization or curing to form a crosslinked thermoset polymer containing the antistatic. Preferred thermoset polymers include polyurethanes, epoxy resins, and unsaturated polyesters.

With regard to claims 9, 10, 11, 12 and 14 wherein the salt moiety is a carboxylate salt or a sulfone salt comprising a phosphonium or ammonium cationic compounds having the following structure:

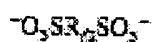


Note that the reference discloses, in one aspect, an antistatic agents comprising at least one polymeric salt. This salt consists of at least one cation having at least one polyoxyalkylene (POA) moiety bonded to a single ammonium center and a fluorinated anion. The cation(s) is represented by the following formula:



where POA is either a homopolymer or a copolymer that is random, blocked, or alternating, and POA comprises 2 to 50 units represented by the formula  $((CH_2)m'CH(R_3)O)$  where each unit independently has  $m'$ , an integer from 1 to 4, and  $R_3$ .  $R_3$  is independently hydrogen or a lower alkyl group (i.e., containing 1 to 4 carbon atoms).  $R_1$  is independently an alkyl, an alicyclic, an aryl, an alkalicyclic, an arylalicyclic, or an alicyclicaryl group that optionally contains one or more heteroatoms (e.g., sulfur, nitrogen, oxygen, chlorine, bromine, or fluorine).  $R_2$  is independently hydrogen, an alkyl, an alicyclic, an aryl, an alkalicyclic, an arylalicyclic, or an alicyclicaryl group that optionally contains one or more heteroatoms (e.g., sulfur, nitrogen, oxygen, chlorine, bromine, or fluorine). And  $y$  is an integer from 1 to 4.

The fluorinated anion is represented by one of the following formulae:



where  $R_1$  is independently a perfluoroalkyl, fluoroalkyl, or fluoroaryl group having from 1 to about 12 carbon atoms and  $R_{12}$  is independently a perfluoroalkylene, fluoroalkylene, or fluoroarylene group having from 1 to about 10 carbon atoms.

With regard to applicants' claim 15 note that the reference discloses that the antistatic agents of the reference are typically about 0.1 to about 50 weight percent of the antistatic coating, based on the solids in the coating.

With regard to claims 16 and 18 note that the reference states in col. 1 lines 7-11, col. 9 lines 54-67, the reference relates to fibers, films, fabrics, coatings, or molded or blown articles comprising the compositions. In other aspects, this invention relates to a topical treatment composition and to processes for imparting antistatic characteristics to insulating materials.

For example, molded articles comprising the composition of the reference can be prepared by standard methods (for example, by high temperature injection molding) and are particularly useful as, for example, headlamp covers for automobiles, lenses (including eyeglass lenses), casings or circuit boards for electronic devices (for example, computers), screens for display devices, windows (for example, aircraft windows), and the like. Films comprising the composition of the invention can be made by any of the film making methods commonly employed in the art.

To form a melt blend by melt processing, the antistatic(s) can be, for example, intimately mixed with pelletized or powdered polymer and then melt processed by known methods such as, for example, molding, melt blowing, melt spinning, or melt extrusion.

The composition as claimed by applicants' in claim 17 has been anticipated in the reference as reflected in the discussion above, particularly with regard to applicants' claim 1, 15, 16 -18 as discussed above.

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With regard to claim 19 as noted above, suitable synthetic polymers include commodity plastics such as, for example, polyacrylates and polymethacrylates (for example, poly(methyl methacrylate)), some modified polystyrenes (for example, styrene-acrylonitrile (SAN) and acrylonitrile-butadiene-styrene (ABS) etc. Also note the discussion above with regard to applicants' claims 8, 9, 11-12 and 14.

With regard to claims 21 see col. 5 lines 21-42, col. 6 through col. 7 line 67.

Thus, the reference discloses a composition comprising a thermoplastic polymer and a polymeric anti-static salt prepared from the same components as claimed by applicants. Thus in view of the above, there appears to be no significant difference between the reference and that which is claimed by applicant(s). Any differences not specifically mentioned appear to be conventional. Consequently, the claimed invention cannot be deemed as novel and accordingly is unpatentable.

### 35 USC 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 13 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over USP 6740413 see abstract, cols. 1-4, claims 14-16 in view of US 20030065071 see abstract, pages 1-4 claims.**

With regard to claims 13 and 22, the reference **USP 6740413** discloses an antistatic

agent salt composition containing except for the particular phosphonium cationic component as claimed.

However, **US 20030065071** discloses a thermoplastic composition comprises (A) 100 parts by weight of a thermoplastic polymer, such as polycarbonate or a blend thereof, (B) 0.0001-10 parts by weight of a sulfonic acid phosphonium salt as an antistatic agent, and (C) 0.01-1 parts by weight of a silicone oil based compound as an antistatic activity enhancer. Such a composition shows a good antistatic behavior without compromising optical properties. Optionally an antistatic synergist may be present.

The reference discloses that antistatic additives used in such compositions enable dissipation of electrical surface charges. Most commonly they attract water to the polymeric surface, thereby forming a conductive surface layer. For optical quality PC applications esters of branched fatty acids and polyhydroxylic compounds and phosphonium sulfonates have been suggested as antistatic additives. Especially the alkylphenylsulfonate phosphonium salts have been appreciated for their antistatic effectiveness.

Examples of desirable sulfonic acid phosphonium salts include tetraalkyl phosphonium salts of dodecylsulfonic acid, and tetraalkylphosphonium salts of dodecylbenzenesulfonic acid, etc. Specifically, the reference discloses that preferred substituted phosphonium sulfonate is fluorinated phosphonium sulfonate and is composed of a fluorocarbon containing an organic sulfonate anion and an organic phosphonium cation. Examples of such organic sulfonate anions include perfluoro methane sulfonate, perfluoro butane sulfonate, perfluoro hexane sulfonate, perfluoro heptane sulfonate and perfluoro octane sulfonate. Examples of the

aforementioned phosphonium cation include aliphatic phosphonium such as tetramethyl phosphonium, tetraethyl phosphonium, tetrabutyl phosphonium, triethylmethyl phosphonium, tributylmethyl phosphonium, tributylethyl phosphonium, trioctylmethyl phosphonium, trimethylbutyl phosphonium trimethyloctyl phosphonium, trimethyllauryl phosphonium, trimethylstearyl phosphonium, triethyloctyl phosphonium and aromatic phosphoniums such as tetraphenyl phosphonium, triphenylmethyl phosphonium, triphenylbenzyl phosphonium, tributylbenzyl phosphonium.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the phosphonium sulfonate moiety in the antistatic salt composition since the reference disclose that such a composition comprising the specific antistatic agent, i.e. phosphonium sulfonate shows a good antistatic behavior without compromising optical properties and enable dissipation of electrical surface charges.

### Correspondence

Please note that the cited U.S. patents and patent application publications are available for download via the Office's PAIR. As an alternate source, all U.S. patents and patent application publications are available on the USPTO web site ([www.uspto.gov](http://www.uspto.gov)), from the Office of Public Records and from commercial sources. Applicants may be referred to the Electronic Business Center (EBC) at <http://www.uspto.gov/ebc/index.html> or 1-866-217-9197.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Terressa Boykin whose telephone number is

571 272-1069. The examiner can normally be reached on Monday through Friday from 6:30am to 3:00pm.

The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. The general information number for listings of personnel is (**571-272-1700**).

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

tmb



Examiner Terressa Boykin  
Primary Examiner  
Art Unit 1711